

CLAIMS

1. A composition comprising a mixture of four deoxynucleotide triphosphates and at least one dideoxynucleotide triphosphate corresponding to one of the four deoxynucleotide triphosphates, wherein the dideoxynucleotide triphosphate is present in a mole ratio to the corresponding deoxynucleotide triphosphate of from 1:50 to 1:500, said composition further comprising a thermally stable polymerase enzyme which incorporates dideoxynucleotides into an extending nucleic acid polymer at a rate which is no less than 0.4 times the rate of incorporation of deoxynucleotides.

2. The composition according to claim 1, wherein the mole ratio is from 1:100 to 1:300.

3. A kit for detection of a target microorganism comprising, in packaged combination,

(a) a pair of primers which bind to the sense and antisense strands, respectively, and flank a selected region within the genome target microorganism; and

(b) a mixture of four deoxynucleotide triphosphates and at least dideoxynucleotide triphosphate corresponding to one of the four deoxynucleotide triphosphates, wherein the dideoxynucleotide triphosphate is present in a mole ratio to the corresponding deoxynucleotide triphosphate of from 1:50 to 1:1000.

(c) a polymerase enzyme which incorporates dideoxynucleotides into an extending nucleic acid polymer at a rate which is no less than 0.4 times the rate of incorporation of deoxynucleotides.

4. The kit according to claim 3, wherein the mole ratio is from 1:100 to 1:500.

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PATENT APPLICATION

5. The kit according to claim 3, wherein at least one of the primers is labeled with a fluorescent label.

6. The kit according to claim 3, wherein the primers are each labeled with a spectroscopically-distinct fluorescent label.

7. The kit according to claim 3, wherein the target microorganism is *Chlamydia trachomatis*.

8. The kit according to claim 7, wherein the first and second primers are selected from the group consisting of the oligonucleotides given by Seq. ID. Nos. 1-17.

9. The kit according to claim 3, wherein the target microorganism is human immunodeficiency virus.

10. The kit according to claim 9, wherein the first and second primers are selected from the group consisting of the oligonucleotides given by Seq. ID. Nos. 18-20.

11. The kit according to claim 3, wherein the target microorganism is human papilloma virus.

12. The kit according to claim 11, wherein the first and second primers are selected from the group consisting of the oligonucleotides given by Seq. ID. Nos. 21-22.